

# WATER CONSERVATION NEWS

*"building sustainability, reliability and accountability through efficient water use"*

## *In this issue...*

DWR Program Helps Manage  
Drainage Water ..... 1

New CUWCC Executive  
Director ..... 2

Editorial: CALFED—Moving  
to Phase II ..... 3

Low-Interest Loans  
Available ..... 6

Reflections on Conserv'99 .... 7

Water Conservation Specialist  
Exam ..... 8

Recycling Reduces Flow of  
Wastewater to Bay ..... 9

Water Conservation  
Newsbriefs ..... 10

Integrated On-Farm Drainage  
Management Workshops ..... 15

1999 Designer/Manager  
School of Irrigation ..... 16

1999 Landscape Water  
Management Program ..... 17

New Publications ..... 18

Water Conservation-Related  
Events ..... 21

CIMIS Network News ..... 24

## DWR Program Helps Manage Drainage Water

**by Baryohay Davidoff, On-Farm Drainage Reduction and Reuse Activity Manager**

*(This article provides information on the Department of Water Resources' Agricultural Drainage Program and introduces a new column in Water Conservation News. The column, called "Drainage Connection," will debut in the July issue and provide more details on program activities.)*

**On** the west side of the San Joaquin Valley, nearly 1 million acres of productive farmland are affected by rising shallow groundwater. This has resulted in soil water-logging and salinization, which threatens crop production. In addition, selenium and other naturally occurring trace elements flushed from the soils by agricultural drainage water contaminate the drainage water and make it potentially hazardous to wildlife. Shallow groundwater conditions have intensified in some areas of the Valley because there are no natural or artificial drainage outlets to safely dispose of drainage water. With no viable new drainage outlets, and because of the closure of the San Luis Drain and some evaporation ponds, new subsurface drainage systems cannot be installed, and some existing drainage systems are unusable. As a result, DWR's present program focuses on short-term options for managing drainage water in the Valley and at the farm level.

DWR's Agricultural Drainage Program provides information and technical assistance to irrigation and drainage districts and growers to help manage agricultural drainage water and associated problems in the San Joaquin Valley. The program will soon get a \$6 million increase from Proposition 204 funds to expand projects and programs on source reduction, drainage reuse and drainage water treatment.

The activities that make up the program include monitoring and evaluating drainage problems, demonstrating irrigation management improvements, designing and managing improvements to evaporation ponds and conducting projects for

## CIMIS

The CIMIS network consists of 102 weather stations. Of these, 60 are owned by agencies other than DWR. The chart on page 24 shows the number of DWR-owned stations and the increase in the number of stations owned by other agencies.

*(continued on page 4)*

**Water Conservation News** provides information on agricultural and urban water conservation developments. This free newsletter is published quarterly by the California Department of Water Resources, Division of Planning and Local Assistance, Water Conservation Office.

**Subscriptions:** If you want to receive this newsletter, send your name and address to:

Department of Water Resources  
Bulletins and Reports  
Attention: Mailing List Coordinator  
P. O. Box 942836  
Sacramento, CA 94236-0001  
(916) 653-1097

**Water Conservation News** is also available on the Internet at:

[www.dpla.water.ca.gov/cgi-bin/publications/pub/main.pl](http://www.dpla.water.ca.gov/cgi-bin/publications/pub/main.pl)

For more information about DWR's water conservation programs call:

**Ed Craddock, Chief**  
Water Conservation Office  
(916) 327-1655

**Baryohay Davidoff**  
Agricultural Water Conservation  
(916) 327-1788

**Greg Smith**  
Urban Water Conservation  
(916) 327-1619

**Keith Watkins**  
Water Use Efficiency  
(916) 327-1808

Water conservation information is also available from the following DWR district staff:

**X. Tito Cervantes**—Northern District  
2440 Main Street  
Red Bluff, CA 96080-2398  
(530) 529-7389

**Ed Morris**—Central District  
3251 S Street  
Sacramento, CA 95816-7017  
(916) 227-7578

**David Scruggs**—San Joaquin District  
3374 E. Shields Avenue  
Fresno, CA 93726-6990  
(559) 445-5262

**David Inouye**—Southern District  
770 Fairmont Avenue  
Glendale, CA 91203-1035  
(818) 543-4600

We welcome comments, suggestions, and story ideas. Please send them to:

**Water Conservation News** Editorial Staff  
Department of Water Resources  
Division of Planning and Local Assistance  
P. O. Box 942836  
Sacramento, CA 94236-0001

Telephone: (916) 327-1685  
Fax: (916) 327-1815  
E-mail: [kanter@water.ca.gov](mailto:kanter@water.ca.gov)

DWR does not endorse any of the businesses or consulting firms mentioned in this newsletter, since there may be others that offer the same or similar services.

## New CUWCC Executive Director

In January, Mary Ann Dickinson started as the new Executive Director of the California Urban Water Conservation Council. She is the first full-time CUWCC Executive Director.

Dickinson has an extensive background in water and environmental issues. At her last two positions with Metropolitan Water District of Southern California, Dickinson managed a variety of policy and communications initiatives, including legislation and public outreach on planning and policy issues. She also worked on implementing conservation programs throughout MWD's service area.

Before that, she was Deputy Director of Public and Government Affairs at South Central Connecticut Regional Water Authority (1989-92); Principal Environmental Analyst at Connecticut Department of Environmental Protection (1985-89); Environmental Consultant to the State of Connecticut, U.S. Army Corps of Engineers and various environmental organizations (1979-85); Executive Director of Connecticut Council on Environmental Quality (1978-79); and Senior Environmental Analyst at Connecticut DEP (1972-78).

Dickinson served as Vice-Chair of AWWA's National Water Conservation Division, coordinating national water conservation issues, and led the national fight against proposed legislation (the Knollenberg Bill) to overturn federal low-flow plumbing standards.

CUWCC provides technical assistance and support for water conservation activities to the signatories of the Best Management Practices Memorandum of Understanding. Water suppliers that signed the MOU agree to develop and implement conservation BMPs using sound economic criteria. The goal is to increase efficient water use statewide.

For more information about CUWCC, call (916) 552-5885; e-mail [cuwcc@cyspaceinfo.com](mailto:cuwcc@cyspaceinfo.com)—or visit their Web site at [www.cuwcc.com/](http://www.cuwcc.com/).



### Mission Statement of the Water Conservation Office

"To advance the efficient management and use of California's water resources in cooperation with other government agencies and the private sector through technical and financial assistance."

# Editorial

by Ed Craddock

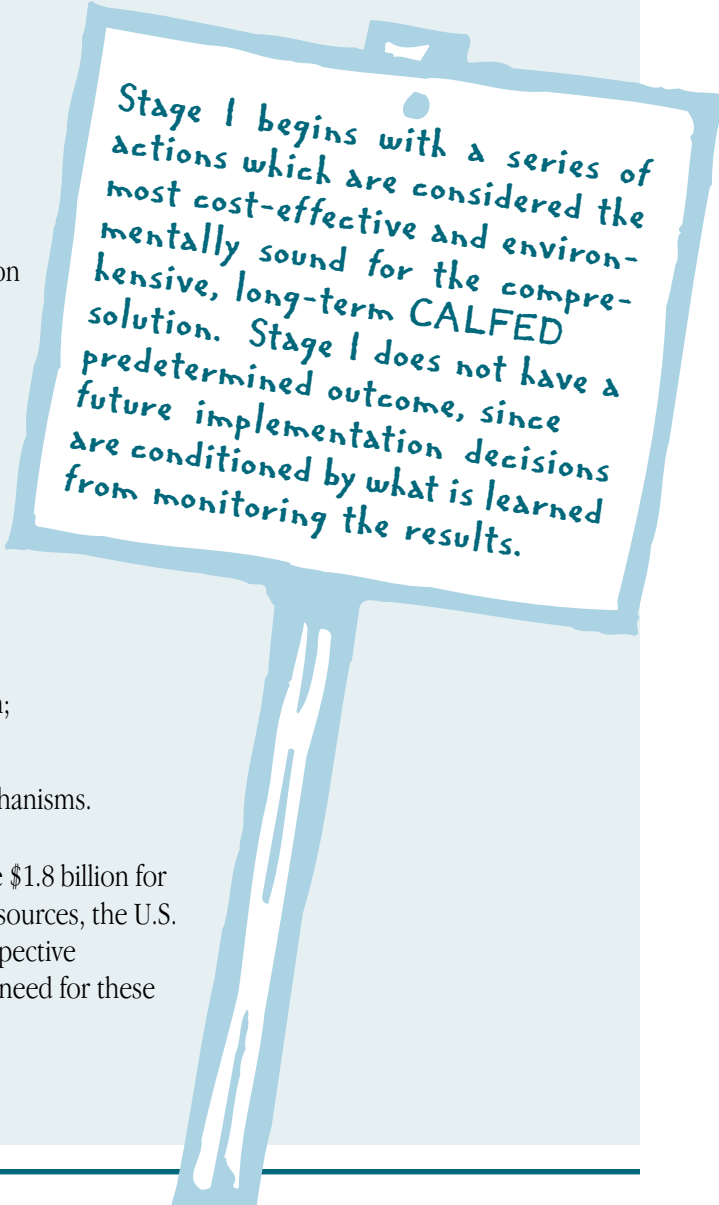
## CALFED—Moving to Phase II

The CALFED *Revised Phase II Report* (see “New Publications” on page 18) outlines a strong program for implementing and documenting the effectiveness of water use efficiency programs. Phase II is scheduled to be completed in the spring of 2000 with the completion of the *Final Programmatic Environmental Impact Statement/Environmental Impact Report* and Record of Decision. During Phase II, CALFED is developing a preferred program alternative that includes an implementation plan focusing on the first seven years (Stage I) following the Record of Decision.

The Stage I actions in the Water Use Efficiency Element are:

1. develop reference conditions;
2. implement agricultural financial incentives program;
3. expand existing State and federal water conservation programs to support end users and district efforts;
4. create a public advisory committee;
5. develop an urban water management plan certification process;
6. implement an urban BMP certification process;
7. develop urban conservation incentives;
8. evaluate agricultural water management plans (Agricultural Water Management Council);
9. resolve water recycling limitations;
10. implement refuge water management;
11. support research to improve water use efficiency;
12. assess the need for additional water rights protection;
13. develop a water measurement program; and
14. implement recommendations regarding market mechanisms.

The preliminary cost estimates for this Stage I program are \$1.8 billion for conservation and recycling. The Department of Water Resources, the U.S. Bureau of Reclamation and others must convince their respective administrations, Congress and the State Legislature of the need for these funds.



Stage I begins with a series of actions which are considered the most cost-effective and environmentally sound for the comprehensive, long-term CALFED solution. Stage I does not have a predetermined outcome, since future implementation decisions are conditioned by what is learned from monitoring the results.

# DWR Program Helps Manage Drainage Water *(continued from page 1)*

drainage water treatment, reuse and disposal. DWR works closely with other State and federal agencies to conduct these activities.

## Drainage Monitoring and Evaluation

Information on drainage water quality and quantity and the extent of shallow groundwater is provided to water users and others.

DWR's San Joaquin District staff compile shallow groundwater data annually. The information is then summarized on maps to show depth to groundwater and electrical conductivity contours. Flow and quality data taken at selected drainage sumps are also published annually. The information is being converted to GIS and electronic database formats and will soon be available on the Internet.

Staff are presently evaluating collected data, reviewing the extent of existing data-gathering activities and interviewing interested agencies.

**The Agricultural Drainage Program is managed by staff from DWR's San Joaquin District Office in Fresno. District staff collect and analyze information and provide technical assistance to water users and others. For additional information on San Joaquin District activities, visit the home page at [www.dpla.water.ca.gov/sjd/home.html](http://www.dpla.water.ca.gov/sjd/home.html) or call (559) 230-3300.**

## On-Farm Drainage Reduction and Reuse

Helping growers reduce deep percolation and drainage water from the source is being accomplished through efficient irrigation management and drainage water reuse on salt-tolerant crops. New and emerging solution-oriented technologies are developed through field studies and demonstration projects and passed on to irrigators and growers. The field studies and demonstrations are conducted in cooperation with the University of California, California State

Universities and interested federal, State and local entities. (See page 15 for the dates and times of upcoming field demonstrations and workshops.

## Evaporation Pond Investigation

This activity supports research and technical assistance for solving environmental problems related to ponds used for drainage water evaporation. Alternative pond management practices to avoid, minimize and mitigate the impacts of selenium and other contaminants on wildlife are developed through studies on selenium

pathways through the food chain and related wildlife behavior.

DWR staff provide assistance to evaporation pond operators and the Central Valley Regional Water Quality Control Board staff in preparing and reviewing environmental documents required to get waste discharge permits from the Board.

A new evaporation pond research facility is currently being developed by DWR in cooperation with Lost Hills Irrigation District and UC Davis. It will be the centerpiece for future investigations as it has much better accessibility than existing sites, and

research objectives can be given a higher priority than growers' needs. Initial work at the site will focus on selenium removal and management.

## Drainage Water Treatment

The technical and economic feasibility of reclaiming drainage water by removing salts, selenium and other contaminants is being investigated. Other activities include investigating anti-fouling and anti-scaling alternatives for low pressure reverse osmosis membranes at UCLA, supporting a cooperative investigation on using wetlands to remove selenium at Tulare Lake Drainage District and investigating ways to concentrate and purify drainage salts and opportunities to market harvested salts.

Planned activities include the following demonstrations in several drainage problem areas:

- ▶ pilot-scale reverse osmosis treatment plants for the anti-fouling and anti-scaling

alternatives developed at UCLA;

- ▶ thermal gradient solar ponds alternatives for concentration of salts in drainage water, safe storage of salts and energy production; and
- ▶ on-farm techniques for concentration of and harvesting drainage salts and investigating potential new uses for drainage salts.

## FOR MORE INFORMATION

Contact the following DWR staff for more information or assistance.

**Jack Erickson**, Program Manager,  
(559) 230-3339; [erickson@water.ca.gov](mailto:erickson@water.ca.gov)

**Baryolay Davidoff**, Activity Manager,  
On-Farm Drainage Reduction and  
Reuse, (559) 230-3332; (916) 327 1788  
(Sacramento Office); [baryolay@water.ca.gov](mailto:baryolay@water.ca.gov)

**John Skelton**, Activity Manager, Evapo-  
ration Pond Investigations,  
(559) 230-3315; [jskelton@water.ca.gov](mailto:jskelton@water.ca.gov)

**Kurt Kovac**, Activity Manager, Drain-  
age Water Monitoring and Evaluation  
& Drainage Water Treatment,  
(559) 230-3343; [kkov@water.ca.gov](mailto:kkov@water.ca.gov)



# LOW-INTEREST LOANS AVAILABLE

Local water agencies can qualify for low-interest loans to help fund water conservation construction projects and feasibility studies. Funds are also available for groundwater recharge and local water supply projects.

The program was created under the Safe, Clean, Reliable Water Supply Act (Proposition 204) which authorized \$30 million in General Obligation bonds for water conservation or groundwater recharge construction projects and feasibility studies and \$25 million in General Obligation bonds for local water supply construction projects.

Under Proposition 204—approved by the voters in 1996—loans for water conservation, groundwater recharge and local water supply construction projects, and water conservation or groundwater recharge feasibility studies, are made at half the interest rate the State pays on the bonds. Grants are available for local water supply feasibility studies only.

Also, under Proposition 82—passed by the voters in 1988—loans for local water supply projects and feasibility studies are made at the full bond interest rate.

“These forms of assistance can help smaller public water agencies build water conservation and recharge or local water supply projects and enhance their water supply,” said William J. Bennett, Chief of the Department of Water Resources’ Division of Planning and Local Assistance.

As 1999 began, 29 projects and feasibility studies qualified for assistance under the Proposition 82 and Proposition 204 programs.

Eligible water conservation projects may include lining or piping canals or ditches, replacing leaking water mains or tanks, installing new water meters and ultra low-flow toilets and improving on-farm irrigation systems.

Projects are evaluated for loans on a first-come, first-served basis, using criteria of cost effectiveness, water savings and engineering and hydrological feasibility.

Proposition 82 local water supply loans and Proposition 204 water conservation and groundwater recharge loans are available to local agencies throughout California. Proposition 204 local water supply loans, however, are limited to public agencies in counties of smaller population. (To be eligible, counties must rank 22nd or below among California’s 58 counties.

Contact DWR at the address/numbers listed below for a county list.)

All construction loans have a \$5 million cap per project. Water conservation or groundwater recharge feasibility study loans may not exceed \$100,000 per study. Local water supply feasibility loans or grants may not exceed \$500,000 per study.

Interested local agencies are encouraged to apply. Agencies wishing application packages or more information on these programs should contact David A. Rolph of DWR’s Division of Planning and Local Assistance, Financial Assistance Unit, 1020 Ninth Street, Third Floor, Sacramento, California 95814-3515. David’s phone number is (916) 445-8259; fax (916) 327-1648; e-mail [drolph@water.ca.gov](mailto:drolph@water.ca.gov).



# Reflections on *Conserv'99*

*"In the early 1980s, there were probably two dozen staff at the local level in California working part time on water conservation. It was amazing to see the number of people at Conserv'99 reflecting the growth that has taken place..."*

*—Suzanne Butterfield  
Assistant General Manager  
Solano Irrigation District*

Packed training sessions were an inspiring start to Conserv'99. Nearly 300 people attended three weekend workshops teaching different levels of water conservation. The American Water Works Association's new "Urban Water Conservation Specialist Certification" class was filled with participants from 10 states and several nations.

The presentations provided useful, up-to-date information. Paul Hawken gave a stimulating keynote address and discussed his latest work, *Natural Capitalism: The Next Industrial Revolution*, which was released in January 1999. Hawken was introduced by Mary Ann

Dickinson, the new Executive Director of the California Urban Water Conservation Council.

The open mike session, "Hot" Conservation Programs and Issues, highlighted 22 innovative programs from California to Holland. Other excellent sessions discussed estimating water use and conservation savings, evaluating the cost effectiveness of water conservation programs and integrating conservation into resources planning.

Receptions in the exhibit hall provided a relaxed atmosphere to meet with the exhibitors and observe new technology from several countries. Many



Photograph by Stephen Payer, DWR Photography Unit.

**Paul Hawken, keynote speaker at Conserv'99, talking with conference participants.**

people visited the Department of Water Resources' exhibit to meet staff, pick up reports and watch computer presentations describing the California Irrigation Management Information System and the Net Benefit Analysis process.

Other exhibitors showcased products that help redefine improvements in water use efficiency. One

company, Caroma International Ltd. of Australia, displayed models of dual flush (3 and 6 liter) toilets. Aquacraft displayed the results of their Residential End Uses of Water Study Survey and "Trace Wizard©" software for evaluating residential water use patterns.

Ray Barsch, Executive Officer of the California

*(continued on next page)*

## Conserv'99 *(continued)*

Water Commission, and Dennis Letl, Chief of DWR's Resources Management Branch, were first-time participants at a water conservation conference. As long-time water engineers, Barsch and Letl found Conserv'99 to have a wealth of materials and variety of approaches.

Suzanne Butterfield, Assistant General Manager of Solano Irrigation District noted, "In the early 1980s, there were probably two dozen staff at the local level in California working part time on water conservation. It was amazing to see the number of people at Conserv'99 reflecting the growth that has taken place. We will know demand management has finally been institutionalized when more managers, finance directors and public works directors attend these conferences." In 1980, Suzanne was appointed the first chief of DWR's Water Conservation Office (formerly called the Office of Water Conservation).

Conserv'99 allowed DWR's water conservation specialists to meet other professionals and discuss strategies necessary for developing effective

programs, technologies and policies to meet the water needs associated with California's future growth.

If you were unable to attend Conserv'99, you can get copies of the proceedings on CD-ROM. The cost is \$75 for AWWA members and \$115 for non-members. To order, contact AWWA's bookstore at 1-(800) 926-7337; fax (303) 347-0804; e-mail [bookstor@awwa.org](mailto:bookstor@awwa.org). You can write them at AWWA Bookstore, 6666 W. Quincy Avenue, Denver, Colorado 80235. Refer to "Order Number 20429." You may also visit their Web site at <http://www.awwa.org>.

The next conference, Conserv'2002, will be held in Hawaii.

## Water Conservation Specialist

# EXAM

The following water conservation exams are scheduled and conducted by the California-Nevada Section of the American Water Works Association. This exam is for anyone who wants to become a certified urban water conservation specialist. The exam fee is \$50 for AWWA members, \$60 for nonmembers. The application and fee must be submitted 30 days before the exam date. No exceptions! Applications are available from AWWA, California-Nevada Section, Certification Program, 1225 S. Bon View Avenue, Ontario, CA 91762; (909) 930-1204.

### EXAM SCHEDULE

May 15, Ontario  
 May 25, Citrus College  
 June 4, Modesto  
 June 5, Ontario  
 June 10, Redding  
 June 16, Ontario  
 July 17, Ontario  
 July 29, Sacramento  
 August 11, Ontario  
 August 20, Modesto  
 September 15, Ontario  
 October 22, Modesto  
 October 28, San Diego (at AWWA's fall conference)  
 November 10, Ontario  
 November 23, Sacramento  
 December 3, Modesto  
 December 4, Ontario  
 December 15, Ontario



# Recycling Reduces Flow of Wastewater to Bay

After a massive water recycling project and stepped-up conservation, San Jose and the other cities that pump wastewater into its sewage treatment plant have met the goal set by the State to avoid damaging the habitat of two endangered species.

Because discharges over three months ending November 1 averaged less than 120 million gallons a day, the Regional Water Quality Control Board won't impose severe environmental restrictions on the Santa Clara Valley. Those restrictions could have included a sewer hookup moratorium and resulting halt to new construction.

One hundred twenty-five major Silicon Valley employers joined with the city, the San Jose Silicon Valley Chamber of Commerce and the Santa Clara Valley Water District to launch a water conservation program called "Slow the Flow and Save the Bay." The campaign got 100 major companies signed on to encourage their 100,000 employees to

install ultra-low-flush toilets. Indoor residential water use accounts for 70 percent of the wastewater flow to the plant, with nearly a third of that flushed down the toilet.

San Jose's problem was that effluent discharged from the plant into Artesian Slough was so clean that it was converting a saltwater marsh at the edge of the South Bay into brackish marsh. That was destroying the habitat of the salt marsh harvest mouse and a bird called the California clapper rail, both of which are on the federal endangered species list.

In response, the city built the South Bay Recycling Project, a \$236 million network of treatment facilities with 60 miles of underground pipelines and pumping plants.

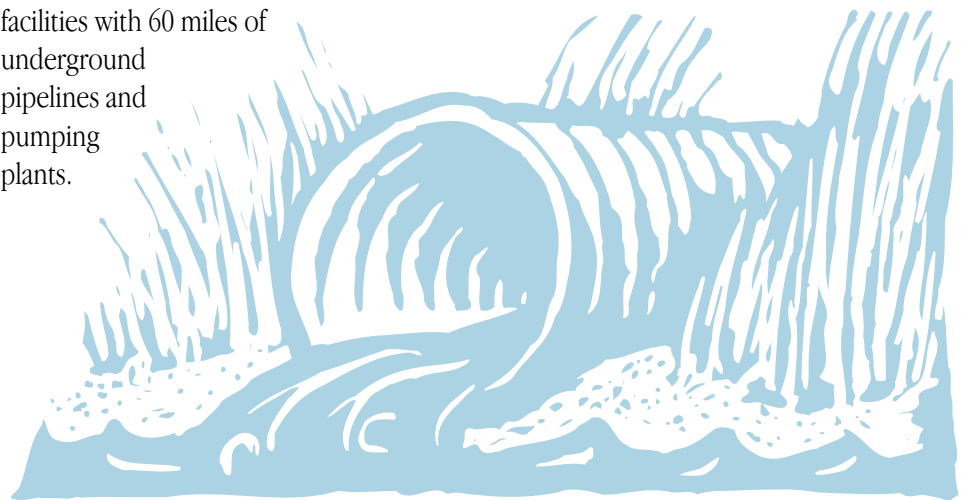
The system diverts treated wastewater from the plant to irrigate golf courses, industrial parks, athletic fields and other large-scale landscapes in San Jose, Santa Clara and Milpitas.

Since June 1998, 30,000 ultra-low-flush toilets have been installed in the area, reducing flow into the plant by 1.2 million gallons a day, although not all of those installations can be attributed to the conservation campaign.

From August through October, the average flow from the plant was 117.9 million gallons a day, complying with the State directive to meet the goal in three consecutive dry months.

By this spring, more than 100 customers are expected to be connected to the recycling water system, diverting 13.1 million gallons daily from the bay. About three-fourths are already hooked up.

For more information about the ultra-low-flush toilet installation and a \$75 rebate from the Santa Clara Valley Water District call (408) 265-2600, the Silicon Valley Manufacturing Group at (408) 501-7852, the San Jose Silicon Valley Chamber of Commerce at (408) 291-5262 or the San Jose Department of Environmental Services at (408) 277-8400.



# Water Conservation

# NEWS

## **Water Conservation News Survey**

Thank you to those who responded to the **Water Conservation News** survey in the January 1999 issue. According to our readers (many of whom have received the newsletter for more than 5 years), most read the newsletter to get information on new and better ways to conserve water, research, local water management issues, legislation and ongoing programs. Programs of most interest to our readers are the California Irrigation Management Information System (CIMIS), public information, efficient irrigation and drainage reduction, urban and agricultural water management plans and water recycling. Topics our readers want more information on include agricultural irrigation scheduling using CIMIS and software; agricultural drainage and advances in irrigation technology; landscape irrigation water use issues; successful BMP implementation; actions local governments are taking to conserve water; water reuse and reclamation; local and state success stories; Web sites; events and ongoing research. Suggestions for new topics in the newsletter include a “new products” page; a “who’s who” column; success stories on watershed planning; drought planning and mitigation issues; status of landscape water audits because of ordinances; soil salinity control using water; programs to help small water districts improve water use; and private funding sources. If you have suggestions on information you would like to see in future issue of **Water Conservation News**, please contact Liz Kanter at DWR’s Division of Planning and Local Assistance, (916) 327-1685; fax (916) 327-1815; e-mail [kanter@water.ca.gov](mailto:kanter@water.ca.gov).

## **Irrigation Scheduling on the Web**

Irrigation scheduling programs are available online to help agricultural and urban water users schedule

irrigations. These online programs provide information using DWR’s California Irrigation Management Information System (CIMIS). For example, the Center for Irrigation Technology at the California State University at Fresno developed **Wateright** to provide irrigation scheduling guidelines for homes, landscapes and agriculture. It also has a tutorial to educate the user on weather-based irrigation scheduling principles and practices. Wateright’s Web site is [www.wateright.org](http://www.wateright.org). The **Statewide Integrated Pest Management** project was developed by UC Davis. It also provides information that can be used by urban and agricultural water users for irrigation scheduling. IPM’s Web site is [www/ipm.ucdavis.edu/](http://www/ipm.ucdavis.edu/). **Pomology Weather Services** provides chilling accumulation information using hourly temperature data from CIMIS primarily for fruit and nut growers, researchers, industry and UC Davis. (Some fruit trees rely on enough “chill” hours for flowers and leaf buds to develop normally. The approximate number of hours needed for normal development varies depending on variety and species. Growers and industry keep track of chilling hours beginning in November to get a sense of the orchard management practices needed and comparison of past year weather and crop load.) Pomology Weather Service’s Web site is [fruitsandnuts.ucdavis.edu/weather/](http://fruitsandnuts.ucdavis.edu/weather/). For more information about these programs and other online programs, contact Simon Eching at DWR’s Water Conservation Office at (916) 327-1836; e-mail [seching@water.ca.gov](mailto:seching@water.ca.gov).

## **New Water Education Kit Available**

“Discover California’s Real Gold—Water” is the theme of the new water education kit available for grades K-6. The kit was developed to help celebrate Water

# BRIEFS

Awareness Month in May and teach students about the importance of water in California—not only in May, but throughout the year. Curriculum in the kit covers literature, art, science, math and social studies. The educational materials will teach children about aquifers and urban and agricultural water use. Materials in the kit include a California waterways map, California poppy seeds and a drought resistant plant activity, the “Liquid Gold” brochure explaining California’s water history, a creative writing activity, an activity about fruits and vegetables, a Sesquicentennial song and a lot more. The goal is to distribute free kits to 4,000 teachers statewide. The kit, valued at \$25, is available to water agencies for only \$5. Water agencies may then distribute the kits to teachers in their local school districts. To purchase the new water education kits, call Lynne Wichmann at the California Water Awareness Campaign at (916) 325-2596. For more information about Water Awareness Month or the new kit, call Ann Marie Alexander at DWR’s Water Education Office, (916) 653-9638; e-mail [annmarie@water.ca.gov](mailto:annmarie@water.ca.gov). The water education kit was developed and funded by DWR, ACWA and numerous California water agencies. Funding was also provided by members of the agricultural community.

## **Water Agencies Honored for Efficient Water Management**

The Association of California Water Agencies recognized 12 water agencies from around the state for long-standing commitment to efficient water management. Nine agencies were certified in ACWA’s “Water Management Awareness Program,” developed to document and recognize member agencies’ accomplishments in water management. Overall, 140 agencies have been certified since 1985. Three agencies were

awarded “Gold Star” certification under the program. This honor is given to ACWA member agencies that have already been certified in the Water Management Certification program, and have improved their water management and conservation plans. The Gold Star program was developed in 1993 to reaffirm ACWA members’ commitment to efficient water management. The agencies certified in the Water Management Awareness Program are Baldy Mesa Water District, Castaic Lake Water Agency, Oakdale Irrigation District, Sacramento County Water Maintenance District, Tahoe City Public Utility District, Bear Valley Community Services District, City of Poway, Pacheco Water District and Santa Margarita Water District. Gold Star recipients are Glide Water District, Inland Empire Utilities Agency and Soquel Creek Water District. ACWA is a statewide organization whose 440 members are responsible for delivering about 90 percent of California’s water. For more information call Jennifer Persike-Becker, ACWA Director of Communications, at (916) 441-4545.

## **Irvine Ranch Water District Receives Awards**

IRWD received several awards from the Santa Ana River Basin Section of the California Water Environmental Association. IRWD’s Michelson Water Reclamation Plant received the “Plant of the Year” award for its overall outstanding operations. This plant treats up to 15 million gallons of wastewater daily, producing high quality, tertiary reclaimed water. IRWD also received the “Collection System of the Year” award. IRWD’s extensive use of reclaimed water means importing less water—which helps keep water rates low. IRWD maintains some 500 miles of collection system pipelines to transport wastewater from homes and businesses to Michelson Reclamation Plant for treatment. CWEA is

*(continued on next page)*

## Water Conservation

# NEWSBRIEFS

dedicated to enhancing the education and effectiveness of California's wastewater professionals through training and certification. The SARB Section of CWEA has 400 members and is one of the three largest sections in California. For more information contact Joyce Wegner-Gwidt at IRWD at (949) 453-5500—or visit the Web site at [www.irwd.com/index.html](http://www.irwd.com/index.html).

### U.S. Environmental Protection Agency's WAVE Program

WAVE stands for Water Alliances for Voluntary Efficiency. It is a non-regulatory water-efficiency partnership created by the EPA to encourage commercial businesses and institutions to reduce water use and increase efficiency, profits and competition. WAVE is part of EPA's effort to prevent pollution and reduce demands on the nation's water and energy infrastructure. Through WAVE, EPA tries to ensure that adequate water resources remain available to support both human and environmental needs. Wave has three types of partnerships: partners (hotels, motels, inns, other commercial and institutional water users), supporters (water service companies, equipment suppliers/manufacturers, government agencies, water/wastewater utilities) and endorsers (trade associations, professional institutes/organizations, industry boards). New members to WAVE sign a Memorandum of Understanding agreeing to survey water-using equipment, and where profitable, install water-efficient upgrades within a set time. Members also agree to design new facilities with water-efficient equipment. EPA helps WAVE members publicize their water-efficient programs through nationwide public service announcements, news releases, etc. Members also receive free water-use analysis software, technical support and access to a national help line. For more information call (202) 260-7288; fax (202) 260-1827; or visit the Web site at [www.epa.gov/owm/fagw.htm](http://www.epa.gov/owm/fagw.htm).

### Water Conservation Web Site

"WaterShare," the U.S. Bureau of Reclamation's Water Conservation Center Web site, provides information for people of all ages with interests ranging from local water conservation programs to a series of interactive children's activities. The USBR Web site contains information on assistance programs for water management professionals, water wise demonstration garden locations, educational water topic tours for students, various USBR publications, links to five other USBR regions and more. Visit this Web site at [www.watershare.usbr.gov](http://www.watershare.usbr.gov).

### Water Wise Gardens of California

The U.S. Bureau of Reclamation developed the Water Wise Gardens Web site and poster to provide information on demonstration garden locations throughout California, contacts, Web sites, hours of operation, types of plants and more. To access Water Wise Gardens, visit USBR's WaterShare Web site at [www.watershare.usbr.gov](http://www.watershare.usbr.gov). The colorful Water Wise Garden poster was developed by USBR and the Water Education Foundation, with cooperation from the California Urban Water Conservation Council. Limited quantities of the poster are available free from USBR. For more information contact Marsha Prillwitz at the Mid-Pacific Region at (916) 978-5123; e-mail [mprillwitz@mp.usbr.gov](mailto:mprillwitz@mp.usbr.gov). Multiple copies of the poster are available for only \$5 each from the Water Education Foundation; telephone (916) 444-6240; fax (916) 448-7699.

### Water Conservation Field Services Program

The U.S. Bureau of Reclamation's Water Conservation Field Services Program is designed to encourage water conservation and assist agencies in developing and implementing effective water management and conservation plans. WCFSP is designed and administered at the local level through the Mid-Pacific Region and Lower Colorado Region area offices. The goal is to have water management plans for 100 percent of the water districts in these Regions by 2002. When a

district has a completed plan, WCFSP provides incentives for implementation. The WCFSP base program includes four activities: water management planning, demonstration of innovative conservation technologies, implementation of conservation measures and conservation education. For opportunities to build partnerships and foster improved water management on a regional, statewide and watershed basis, contact Meena Westford, Lower Colorado Water Conservation Coordinator, Southern California Area office, at (909) 695-5310; fax (909) 695-5319; e-mail [mwestford@lc.usbr.gov](mailto:mwestford@lc.usbr.gov). For information on the Water Conservation Field Services Program, contact the following Water Conservation Specialists.

- ▶ Julie Spezia, Mid-Pacific Region, (916) 978-5212
- ▶ Steve Jones, Lower Colorado Region, (702) 293-8186
- ▶ Dennis Perkins, Northern California, (530) 934-1327
- ▶ Pete Vonich, Central California, (916) 989-7265
- ▶ Paula Landis (acting), South-Central California, (559) 487-5103
- ▶ Meena Westford, Southern California, (909) 695-5310
- ▶ Mark Niblack, Yuma Area, (520) 343-8253

Additional information is also available at USBR's WaterShare Web site at [www.watershare.usbr.gov](http://www.watershare.usbr.gov).

### **Certification Programs—Water Conservation Specialists**

The American Water Works Association, California-Nevada Section, recently developed a training program to certify urban water conservation specialists. AWWA piloted the training last fall and held the first Water Conservation Level I class at Conserv'99 in January. Two more classes were held in March and early April. Now that the Level I training and certification exam is established, work will concentrate on the intermediate level. The first intermediate training is expected to begin next winter. The training is endorsed by the U.S. Bureau of Reclamation and the Department of Water Resources. These two agencies are now collaborating

on a possible certification program for agricultural water conservation specialists with the Agricultural Water Management Council. AWWC's MOU also requires a water conservation coordinator to be appointed in each participating district. Information on schedules for future classes and exams is available from Cindy Contreras of the AWWA California-Nevada Section, (909) 930-1204.

### **State Approves Rate Increase for Six Southern California Water Agencies**

Six Southern California water agencies will raise rates this year, with some residents seeing monthly bills increase as much as \$13.44, according to the California Public Utilities Commission. The rate increase was approved to help the utilities raise money to cover operating expenses, the PUC said in a statement. Metropolitan Water District, the largest of the six water agencies, will be able to raise rates 17 percent. The increase is expected to generate \$9.8 million. The average residential customers will see their bill increase by \$6.55. For more information call the Metropolitan Water District at (213) 217-6000.

### **Recycled Water Reaches More Users**

Customers buying recycled water from the Central Contra Costa Sanitary District for irrigation, dust control and other nondrinking uses have increased to nearly a dozen. Customers include the Buchanan Field Golf Course in Concord, the Pleasant Hill Recreation & Park District, Diablo Valley College, a cemetery, a quarry products company and a topsoil business, the district says. The district will try adding three or four customers by the next irrigation season, says project manager Lynne Putnam. It has been talking with the Mt. Diablo Unified School District about serving a few schools near the water district's pipeline. It began distributing recycled water in April and has received \$75,000 to \$80,000 from its sale. "We've covered our operations and maintenance costs," says Paul Morsen, the water district's director of administration. With the

*(continued on next page)*



## Water Conservation

# NEWSBRIEFS

advent of winter, its sales have dropped to an average of about 500,000 gallons a day. The district gives reclaimed water extra disinfection at its Martinez sewage treatment plant before distributing it. In August, East Bay Municipal Utility District also approved a plan to distribute recycled water to customers in Lafayette, Orinda, Moraga, Walnut Creek and nearby areas beginning in 2001. For more information call EBMUD at (510) 835-3000.

### Drought Could Be in Works

The nation's Midwestern states are overdue for a 1930s-style dust bowl. While it's too early to tell for sure, the parched summer of 1998 may have marked the start of a drought, government weather researchers say. A much larger drought could be on the way in the next century or so, researchers say. Using tree rings, submerged tree trunks, archaeological finds, lake sediments and sand dunes, they found that twice in the last 700 years "megadroughts" have struck the area—and have lasted two to four decades, instead of years. The megadroughts were just one element of a complex cycle of droughts discovered by researchers from the National Oceanic and Atmospheric Administration. They also found that major multi-year dust-bowl droughts generally hit twice a century and that smaller two-year droughts strike every 20 years or so. Droughts are expensive. The \$39 billion expense of the 1-to-2-year drought in 1988-89 was a bigger blow to the U.S. economy than the devastation of Hurricane Andrew, the NOAA estimates. For more information contact NOAA at (301) 713-2458 or see the Web site at [www.esdim.noaa.gov/](http://www.esdim.noaa.gov/).

### Deal May Keep Tulare District Canal Unlined

The Tulare Irrigation District board of directors moved toward lining miles of an irrigation canal with concrete. Work will not be done this spring or summer, giving all sides time to try to make a deal come together. The Tulare Irrigation District wants to line the canal with concrete to prevent water seepage. The canal loses about 10,000 acre-feet of U.S. Bureau of Reclamation

water each year to seepage, which costs the district \$300,000 a year. The project has become controversial because it would mean wiping out more than 220 mature oak trees in and around the canal and because it would hamper groundwater recharge. The district awarded a \$7.4 million contract to a general contractor to line the canal that runs roughly north-south between Highways 216 and 198. The compromise involves the irrigation district, USBR and property owners along the canal. The major elements of the compromise are:

- ▶ Tulare Irrigation District would not line 10 miles of the canal.
- ▶ USBR would pay the district an undisclosed amount from an environmental restoration fund to compensate the district for water lost to seepage.
- ▶ Property owners adjacent to the canal—there are a few hundred—would give up a 50-foot conservation easement.

The Kaweah Delta Water Conservation District, in whose boundaries the Tulare Irrigation District lies, is credited with stepping into the fray to try to find common ground among the interested parties. For more information call the Tulare Irrigation District at (209) 686-3425.

### Recycled Water to Flow in Dublin this Year

Recycled water will flow into Dublin sports fields, parks, median strips and landscaping starting this year. The Dublin San Ramon Services District will pipe water from its new \$20 million plant to the Dublin sports complex late this year and to eastern Dublin customers by 2000. The water will be used for landscape irrigation only. Eastern Dublin, where 13,800 houses and 11 million square feet of businesses and 4 city parks are planned, is earmarked for recycled irrigation water. The cost of producing and delivering recycled water will be more economical than that of potable water. For more information contact the Dublin San Ramon Services District at (925) 828-0515; fax (925) 829-1180; or visit their Web site at [www.dsrdsd.com/aboutthedistrict.html](http://www.dsrdsd.com/aboutthedistrict.html).

# FREE!

## Integrated On-Farm Drainage Management Workshops

A series of regional workshops on innovative techniques of Integrated On-Farm Drainage Management (IFDM) will be held for the first time at select locations in the San Joaquin Valley.

IFDM includes drainage reuse for agroforestry, forages and halophytes, and drainage management of salt and selenium by separation in solar evaporators.

The workshops will be presented by the California State University Fresno, Center for Irrigation Technology and cosponsored by the Department of Water Resources. A field demonstration at the Red Rock Ranch IFDM Project in Five Points in western Fresno County will precede the workshops.

The workshops will cover topics on local setting, system design, crop selection, operation and management, economics and environmental issues. The workshops will be conducted by leading researchers and managers of local IFDM systems. The locations and schedule are as follows:

### IFDM FIELD DEMONSTRATION:

May 13      Red Rock Ranch, Five Points  
Fresno County, 9:00 a.m. to 12:30 p.m.

### IFDM WORKSHOPS:

May 26      Bakersfield, Kern County  
8:00 a.m. to noon  
June 3      Tulare, Tulare County  
8:00 a.m. to noon  
June 8      Five Points, Fresno County  
8:00 a.m. to noon  
June 10      Firebaugh, Fresno County  
8:00 a.m. to noon

**The workshops are free.** For more information and advance registration, call CIT at (559) 278-2066 or DWR at (916) 327-1667.

# 1999 Designer/Manager School of Irrigation

July 26—August 6

Sponsored by the U.S. Bureau of Reclamation, Mid-Pacific Region

**WHERE:** Irrigation Training and Research Center  
Cal Poly State University, San Luis Obispo

## AGRICULTURE/LANDSCAPE CLASSES

- ▶ Basic Soil, Plant and Water Relationships (July 26) \$165—Covers IA Level II material on this topic; texture and structure; water holding capacity, retention; intake rates; evaporation; transpiration; soils classification; measurement of soil moisture; tension.
- ▶ Basic Pipeline Hydraulics (July 27) \$135—Pipe materials & sizes; mainline computations, tapered pipe, branches; energy equation, friction, elevation changes; minor losses.
- ▶ Basic Pumps (July 28) \$165—Pump curves; pumps in series and parallel; system curves; total dynamic head computations for vertical and booster pumps; efficiency, water horsepower, brake horsepower, input horsepower; pump selection from catalogs.

## AGRICULTURE CLASSES

- ▶ Chemigation (July 29) \$135—Fertilizers; techniques for various irrigation methods; reducing leaching losses; emphasis on drip/micro; injection equipment and safety; features ITRC book, *Fertigation*; 5.1 hours Pest Control Advisor credits (pending).
- ▶ Advanced Pumps (July 29-30) \$275—Suggested prerequisites: basic pipeline hydraulics, basic pumps, submersible pumps; well screens and well development; variable speeds, electric and engines; shaft losses, shaft sizing; maintenance and troubleshooting.
- ▶ Row Crop Drip Irrigation (July 30) \$135—Suggested prerequisites: basic pipeline hydraulics. Design

layouts, flushing, fittings; how design relates to management; hose installation, retrieval.

- ▶ Drip/Microirrigation (August 2-4) \$400—Suggested prerequisites: basic soil, plant and water, basic pipeline hydraulics, basic pumps filtration. Step-by-step design procedure of hardware selection and hydraulics; emitter and micro system designs; buried drip for trees and vines; plugging prevention; ITRC book and software.
- ▶ Irrigation Scheduling, Salinity and Drainage (August 5-6) \$265—Suggested prerequisite: basic soil, plant and water. ETo and crop coefficients; practical irrigation scheduling; how efficiency and uniformity influence scheduling; drainage concepts and layouts; salinity; leaching requirements; reclamation.

## LANDSCAPE COURSES

- ▶ Landscape Irrigation Auditor (August 2-3) \$235—16 hours PCA credits pending. Software included; irrigation evaluation and irrigation scheduling; sprinkler, drip, micro, and bubbler.
- ▶ Water Budgeting for Landscape (August 4) \$95—Includes ITRC's latest software; design and/or manage a site to a water budget; allows users to conform to Model Landscape Ordinance (AB 325).
- ▶ Landscape Sprinkler Design (August 5) \$165—Suggested prerequisites: basic soil, plant and water, basic pipeline hydraulics. Application rates; valves, piping, pipeline sizing; sprinkler selections; designing blocks.

- ▶ Microirrigation for Landscape (August 6) \$165—Hydraulics of hoses, emitters, and sprayers; equipment selection and maintenance of the system; how to match equipment to plant materials and other stations.

**REGISTRATION:** Attendance is limited to 35 persons, reserved on a first-registered basis. Checks or money orders should be made out to “Cal Poly” and sent to: ITRC, Cal Poly State University, San Luis Obispo, CA 93407. Call (805) 756-2434 to register by phone with a Mastercard or Visa, or to have a registration form faxed to you.

# 1999 Landscape Water Management Program

## LANDSCAPE IRRIGATION AUDITING

This two-day training workshop prepares landscape professionals to perform site inspections, evaluate irrigation systems and develop efficient irrigation schedules for drip, bubble, microspray and sprinkler systems. The majority of the workshop is spent in the field performing landscape irrigation audits, and at the computer generating irrigation schedules. Benefits from audits include water and costs savings, as well as improved landscape health and appearance. This training workshop is a prerequisite to taking the Landscape Irrigation Auditor Certification exam offered by the Irrigation Association. The exam is usually conducted on the evening immediately following the last day of the workshop.

## LANDSCAPE WATER BUDGETING

This one-day workshop presents water budgeting software for use by planners, designers and landscape managers. The software helps the user define hydrozones, evaluate “what-if” situations for planting areas to comply with the water budget, forecast annual water use, and evaluate

annual water costs. Preliminary irrigation schedules can also be generated. The *Water Budgeting Handbook* is based on the State’s Model Landscape Ordinance (AB 325) and the software can be tailored to handle alternative water budget and allocation methods.

## WORKSHOP FEES

Landscape Water Auditing Two-Day Workshop—\$235  
Landscape Water Budgeting One-Day Workshop—\$95  
Both workshops are \$295.

(The Auditing workshop is offered for \$210 to those who have previously attended.)

## SPONSORS

Department of Water Resources, Water Conservation Office  
Santa Clara Valley Water District  
City of Santa Clara  
South Bay Water Recycling Program  
City of San Jose  
Fullerton College

### LANDSCAPE WATER AUDITING

June 9-10  
June 16-17  
August 2-3  
December 8-9

### LANDSCAPE WATER BUDGETING

June 11  
June 18  
August 4  
December 10

### LOCATIONS

Fullerton (Fullerton College)  
Santa Clara (Lick Mill Park)  
San Luis Obispo (Cal Poly State University)  
San Luis Obispo (Cal Poly State University)

# NEW Publications



## ***—Draft Methodology for Determining Applicability/Implementation of Canal Linings/Piping***

## ***—Draft Methodology for Determining Applicability/Implementation of Reservoir Lining***

Distribution system lining/piping is a Best Management Practice (BMP) which all water districts are required to implement or evaluate within the Central Valley Project under the 1996 Central Valley Project Improvement Act criteria for water management plans. Evaluating this BMP has proven troublesome for many districts, particularly those which rely on conjunctive use of surface and groundwater. These two draft documents were developed to help districts evaluate whether they should implement this BMP. Copies of these publications are available on USBR's WaterShare Web site at [209.21.0.235/documents/index.htm#RRA](http://209.21.0.235/documents/index.htm#RRA). For more information contact Tracy Slavin at (916) 978-5214; e-mail [tslavin@mp.usbr.gov](mailto:tslavin@mp.usbr.gov).

## ***Calfed Bay-Delta Program Revised Phase II Report***

The San Francisco Bay/Sacramento-San Joaquin Delta is the largest estuary on the West Coast—and a haven for plants and wildlife, supporting more than 750 plant and animal species. It supplies drinking water for two-thirds of the people in California and irrigation water for roughly 7 million acres of the most productive agricultural land in the world. The *CALFED Bay-Delta Program Revised Phase II Report* presents a framework for restoring ecological health to this area, providing a more reliable water supply for agriculture and cities, and improving drinking water quality in California. The *Revised Phase II Report* is available on CD-ROM, in print and on the CALFED Web site at [www.calfed.water.ca.gov/current\\_pubs.html](http://www.calfed.water.ca.gov/current_pubs.html). For more information call (916) 657-2666.

## ***Calfed Revised Draft Program Plans—February 1999***

- *Ecosystem Restoration Program Plan, Volume 1—Ecological Attributes of the San Francisco Bay-Delta Watershed*
- *Ecosystem Restoration Program, Volume 2—Ecological Management, Zone Visions*
- *Long-Term Levee Protection Plan*
- *Strategic Plan for Ecosystem Restoration*
- *Water Quality Program*
- *Watershed Program Plan*
- *Water Transfer Program*
- *Water Use Efficiency Program*
- *Ecosystem Restoration Program Plan Maps*

These reports support and elaborate upon information contained in the *CALFED Bay-Delta, March 3, 1999, Program Revised Phase II Report*. They are significant advancements over previous versions and reflect the interest and hard work of the public, interested parties and agencies. All are available in print and online at the CALFED Web site at [www.calfed.water.ca.gov/current\\_pubs.html](http://www.calfed.water.ca.gov/current_pubs.html). For more information call (916) 657-2666.

## ***Southern California Comprehensive Water Reclamation and Reuse Study***

The U.S. Bureau of Reclamation, with eight local government agencies, completed the first phase of the *Southern California Comprehensive Water Reclamation and Reuse Study*. The Study assesses the long-range water supply and reuse potential in the region, which covers seven counties from Ventura County to the Mexican



border. A report that summarizes baseline data collected during the first phase of the study is nearly complete. The *SCCWRR Study Phase IA Report* quantifies reclaimed water supply and demand and groundwater and recharge supplies, and identifies environmental enhancement projects. The Report found that total water demand in the Study area exceeds current available fresh water supplies through the year 2040, and that reclaimed water supplies cover the shortfall. Of the existing and potential environmental enhancement projects, the report identifies 128 that could use reclaimed water. The next phase of the Study will focus on developing and evaluating feasible project alternatives for the 20- and 50-year planning period. For more information about the Study or a copy of the *SCCWRR Study Phase IA Report* executive summary, contact USBR representatives Rick Martin, (909) 695-5310; e-mail [rmartin@lc.usbr.gov](mailto:rmartin@lc.usbr.gov) or Kris Mills, (702) 293-8620; email [kmills@lc.usbr.gov](mailto:kmills@lc.usbr.gov).

### ***Xeriscape Plant Guide***

This full-color book is a comprehensive resource for more than 100 low water use plants that bring color, beauty and use to gardens. This book is particularly suited for the western mountain state regions of the United States. However, xeriscape techniques and most of the listed plants work throughout most of North America as well as other parts of the world with climates and elevations similar to the Rocky Mountains, Great Basin and western prairies. This fully illustrated reference with information on low water use trees and shrubs, perennials and vines, ground covers, annuals and shade plants has been reviewed by professional horticulturalists and landscapers. This book is published by Denver Water and the American Water Works Association. The cost is \$32.95 for AWWA members; \$34.95 retail. For more information call AWWA at (303) 794-7711 and refer to "Order Number 20417."

### ***Xeriscape Color Guide***

Consisting of colorful, easy-to-read and vividly illustrated charts, the *Xeriscape Color Guide* shows the colors of the flowers, fruit, bark and foliage of 100 plants during each season of the year. The guide has information on land-use, light and water requirements for each plant. The book is divided into five sections: trees and shrubs,

perennials and vines, grasses and groundcovers, annuals and shade plants. This book is particularly suited for the western mountain state regions of the United States. However, xeriscape techniques and most of the listed plants work throughout most of North America as well as other parts of the world with climates and elevations similar to the Rocky Mountains, Great Basin and western prairies. This book is published by Denver Water and Fulcrum Publishing. The cost is \$14.95 for AWWA members and retail. For more information call AWWA at (303) 794-7711 and refer to "Order Number 20382."

### ***Saving Water, Saving Dollars: Efficient Plumbing Products and the Protection of America's Waters***

This study shows that cities both large and small are successfully promoting water conservation, including the 1.6 gallons-per-flush (gpf) toilet and water efficient faucets and showerheads. One major result of these cities' efforts at water conservation may be to postpone or avoid billions of dollars in water and wastewater infrastructure costs in the next two decades, according to the report. Many of the states that stand to benefit the most from reducing their anticipated infrastructure costs through water conservation tend to be located far from the arid West. To order a copy contact the American Council for an Energy Efficient Economy Publications Office, (202) 429-0063; fax (202) 429-0193; e-mail [ace3pubs@ix.netcom.com](mailto:ace3pubs@ix.netcom.com).

### ***1998 Water and Wastewater Rate Survey Summary***

This survey summary provides information on water and wastewater charges for a sample of U.S. cities. The survey was conducted by Raftelis Environmental Consulting Group, Inc. during the summer and fall of 1997. The data are for the 1996 calendar year, or the most recent fiscal year (1996-1997). The survey includes information on:

- median MGD of water and wastewater sold or treated
- rates and charges
- water rate structures
- median water and wastewater charges
- median system development charges
- median outside-city differential for water

For more information on this survey summary visit the

*(continued on next page)*

WaterWiser Web site at [www.waterwiser.org/rates98/main.html](http://www.waterwiser.org/rates98/main.html). To get a copy of the 1998 Survey contact Raftelis Environmental Consulting Group, Inc., 6100 Fairview Tower, Suite 615, Charlotte, North Carolina 28210; phone (704) 556-1936; fax (704) 556-1937; e-mail [graftelis@mindspring.com](mailto:graftelis@mindspring.com).

### ***Landscape Water Management for Water Savings—How to Profit from a Water Efficient Future, Fall 1998***

This new publication will help commercial and home landscape contractors, related green industry businesses, property management companies and homeowner association boards understand State and local water issues. The 79-page handbook discusses the basics of how to optimize landscape water efficiency—and still profit. The handbook contains sample landscape maintenance specifications for water and resource efficient landscapes, the Water Use Classification of Landscape Species (WUCOLS) plant list, and a list of UC Cooperative Extension offices. This publication was written by Tom Ash, Water Efficiency Program Manager with CTSI corporation, with suggestions from the California Landscape Contractors Association Resources Management Committee. It was published by Municipal Water District of Orange County. In addition to MWDOC, the publication was sponsored by the California Landscape Contractors Association, U.S. Bureau of Reclamation, Metropolitan Water District of Southern California, California Department of Water Resources and Irvine Ranch Water District. Limited copies of the handbook are available free from USBR; contact Marsha Prillwitz at (916) 978-5213; e-mail [mprillwitz@mp.usbr.gov](mailto:mprillwitz@mp.usbr.gov) for more information. Copies are also available from MWDOC for \$20 each; contact Joe Berg at (714) 963-3058.

### ***Sustainable Use of Water: California Success Stories***

This new report is published by the Pacific Institute. It highlights 28 success stories on successful water conservation and ecosystem protection programs in California. Some of the successful programs discussed include water recycling programs, alternative water pricing structures to encourage more efficient use of

water, innovative programs in the agricultural sector to reduce water use and groundwater banking. Copies of the report are available from the Pacific Institute for \$20 each. To view the report's executive summary, visit the Pacific Institute Web site at [www.igc.org/pacinst/Pubs2.html](http://www.igc.org/pacinst/Pubs2.html). To order a full version of this report contact the Pacific Institute at (510) 251-1600; e-mail [pistaff@pacinst.org](mailto:pistaff@pacinst.org).

### ***Revised Layperson's Guide to the Central Valley Project***

This updated guide is now available from the Water Education Foundation. It contains the latest information on California's largest surface water delivery system. The guide has information on CVP history, facilities, operations and related legislation including the 1992 CVP Improvement Act and its implementation. It also covers the connection between the CALFED Bay-Delta program and the CVP. Copies of the guide are available for \$5 each (\$4 each for 10 or more) plus tax and shipping. For more information, contact Diana Farmer at WEF, (916) 444-6240; fax (916) 448-7699; or visit WEF's Web site at [www.water-ed.org](http://www.water-ed.org).

### ***Independent Review Panel on Agricultural Water Conservation Potential—Executive Summary and Summary Report***

CALFED convened an "Independent Review Panel on Agricultural Water Conservation" last December to help guide future development and implementation of CALFED's agricultural water use efficiency program. The panel consisted of five nationally recognized scientists who provided expertise on irrigation science and engineering, hydrology, plant physiology and evapotranspiration, agricultural economics and aquatic ecosystem restoration. The discussions also included eight stakeholder technical representatives with expertise in the Sacramento/San Joaquin Bay-Delta system. These publications summarize the Panel's discussions, findings and recommendations resulting from the two and one-half day deliberations. Both are available on the CALFED Web site at [www.calfed.water.ca.gov/current\\_pubs.html](http://www.calfed.water.ca.gov/current_pubs.html). For more information call (916) 657-2666.

# Water Conservation-Related EVENTS

## May 1999

### Water Awareness Month

—“Use Water Wisely—It’s a Way of Life” is the theme for this year’s 12th annual Water Awareness Campaign. Each May, water agencies and organizations throughout California participate in this annual event to increase public awareness about the value of water. For more information contact Ann Marie Alexander at the Department of Water Resources’ Water Education Office at (916) 653-9638; e-mail [annmarie@water.ca.gov](mailto:annmarie@water.ca.gov)—or contact your local water agency.

## May 3-5

### Government Conference on the Environment Anaheim Convention Center Anaheim, California

—This fifth Government Conference on the Environment is designed for government, business and industry. The conference is being combined with the National Marketplace for the Environment conference. Conference exhibits will cover solutions for all facets of the environmental industry including consulting, engineering, government, laboratories, software, technology, products and services. Other environmental issues will include green buildings, transportation, pollution prevention, recycling, waste management, energy and office products. For more information, call (916) 630-8978; fax (916) 630-8756.

## May 5-7

### Association of California Water Agencies 1999 Spring Conference “Investing for the Millennium” Caesar’s Hotel

#### South Lake Tahoe, Nevada

—The conference will explore steps to take to reinvest in our water system infrastructure in order to meet the challenges of the new millennium. A number of issue

panels will focus on the following topics: Area of Origin, Non-point Source Issues, Water Project Financing/Infrastructure Bank, Water Transfers and Groundwater/Conjunctive Use. On May 4, ACWA will hold a non-technical workshop on “Redefining Safe” to deal with water quality issues/drinking water challenges of interest to water industry engineers, attorneys, district directors and others. This briefing is a separate, special event—not included in the ACWA preregistration package. For more information contact Jennifer Persike-Becker, ACWA Director of Communications, or the ACWA Meetings and Membership Department at (916) 441-4545. Or visit their Web site at [www.acwanet.com](http://www.acwanet.com).

## May 10-12

### American Water Resources Association Annual Spring Specialty Conference “Potential Consequences of Climate Variability and Change to Water Resources of the United States” The Westin Atlanta Airport Hotel Atlanta, Georgia

—Climate variability and change pose challenges and opportunities for the United States, especially with respect to water resources. AWRA is dedicating its 1999 Spring Specialty Conference to this topic to assist in the National Assessment of the Potential Consequences of Climate Variability and Change review process, and to provide an opportunity for presentation of other technical papers relevant to this important subject. Topics to be discussed include current stresses on water resource systems, how those stresses might change if climate changes, strategies available to cope with both current and future stresses and more. For more information, contact AWRA headquarters office at (703) 904-1225; fax (703) 904-1228; e-mail [awrahq@aol.com](mailto:awrahq@aol.com); or visit their Web site at [www.awra.org](http://www.awra.org).

*(continued on next page)*

# *Water Conservation-Related* **EVENTS**

**May 15**

**Water Conservation Garden at Cuyamaca College  
Grand Opening**

**Cuyamaca College**

**12122 Cuyamaca College Drive West**

**El Cajon, California 92019**

—The opening celebration of the Water Conservation Garden at Cuyamaca College will be Saturday, May 15 at 10 a.m., during the college's Spring Garden Festival. This annual event includes live horticulture demonstrations and displays, free seminars, book sales, plant sales and experts to answer gardening questions. Notable elected officials and local celebrities will help kickoff the garden's opening celebration. The garden is located on four acres near the entrance of Cuyamaca College. It will be open between 10 a.m. and 4 p.m. Admission and parking are free. For more information call (619) 670-2290 or visit the Web site at [www.thegarden.org](http://www.thegarden.org).

**May 16-19**

**National Watershed Coalition's Sixth National  
Watershed Conference**

**"Getting the Job Done at the Ground Level"**

**DoubleTree Hotel**

**6505 Interstate Highway 35 North**

**Austin, Texas 79752**

—This conference deals with natural resource issues on a watershed basis. It will provide a forum for exploring the effect of changing government roles, research and development, new planning and implementation technologies, current watershed issues, infrastructure conditions, innovative funding possibilities, watershed project sponsor concerns and the relationship between government and non-governmental watershed interest groups. For information contact John W. Peterson, NWC Executive Director, at (703) 455-6886 or (703) 455-4387; fax (703) 455-6888; e-mail [jwpeterson@erols.com](mailto:jwpeterson@erols.com).

**May 19-21**

**Water Education Foundation**

**Central Valley Tour—The San Joaquin Valley**

—This three-day, two-night tour visits Panoche Irrigation District, San Luis Reservoir, Westlands Water District, Grasslands Water District, Mendota Pool, Friant Dam, the San Joaquin River parkway, local farms and agricultural processing plants. Traveling the length of the west and east sides of the Central Valley, this tour offers participants a clear understanding of how two of the state's major water systems, the State Water Project and the federal Central Valley Project, have shaped this region. The tour registration fee is \$525 for one person, single occupancy room and \$950 for two people, double occupancy room. For more information and a free brochure contact WEF at (916) 444-6240—or visit their Web site at [www.water-ed.org](http://www.water-ed.org).

**May 26-27**

**Great Valley Center Regional Conference  
"Our Place in the World—A 21st Century  
Opportunity"**

**Radisson Hotel**

**Sacramento, California**

—This is Great Valley Center's second annual Regional Conference. The two-day conference will feature speakers and sessions on diverse issues such as agricultural conservation, water, transportation, telecommunications, global competitiveness and more. For more information contact Mary Stabelfeld, Conference Coordinator, at (209) 668-6246.

**June 2**

**CUWCC Plenary Session**

**Eastern Municipal Water District**

**Perris, California**

For more information call (916) 552-5885; fax (916) 552-2931; e-mail [cuwcc@cyspaceinfo.com](mailto:cuwcc@cyspaceinfo.com). Or visit the Web site at [www.cuwcc.com](http://www.cuwcc.com).

### **June 9-11**

#### **Natural Resources Law Center “Strategies in Western Water Law and Policy: Courts, Coercion and Collaboration”**

—The Natural Resources Law Center, University of Colorado at Boulder, will focus its 20th summer conference on the principal problem-solving strategies in Western water law and policy. The conference will address Colorado courts, the public trust, the Snake River and other basin-wide adjudications, the Clean Water Action Plan and Native American water rights. Full registration cost is \$515 (\$250 for government, academics and non-profits) before May 14 (\$565 and \$290 after May 14). Registration for Friday only is available for \$75 (\$85 after May 14). For more information contact Donna Peavy at (303) 492-1288; fax (303) 492-1297; e-mail [nrlc@colorado.edu](mailto:nrlc@colorado.edu); or visit their Web site at [www.colorado.edu/law/NRLC](http://www.colorado.edu/law/NRLC).

### **June 16-18**

#### **Water Education Foundation**

#### **San Francisco Bay-Sacramento/San Joaquin Delta Tour**

—The tour travels through the Sacramento/San Joaquin Delta and San Francisco Bay, with a houseboat ride on Delta waterways and visits to Delta farms, Banks Pumping Plant, the Skinner Fish Collecting facility, the Delta Cross Channel, the Bay-Delta model in Sausalito, Los Vaqueros Reservoir in Contra Costa County and Suisun Marsh. The three-day, two-night tour begins and ends at Sacramento International Airport, and also includes a ferry ride across San Francisco Bay and dinner at the beautiful Alta Mira Hotel in Sausalito. The tour registration fee is \$525 for one person, single occupancy room and \$950 for two people, double occupancy room. Contact WEF at (916) 444-6240 for more information and to receive a free brochure—or visit their Web site at [www.water-ed.org](http://www.water-ed.org).

### **June 20-24**

#### **American Water Works Association’s Annual Conference & Exposition**

#### **Lakeside Center at McCormick Place Chicago, Illinois**

—The conference will address the most pressing issues facing the drinking water industry. In addition, the

conference will offer 80 technical sessions over four days, dealing with water treatment, distribution, regulations, technology, public information and more. Eleven in-depth workshops will also be offered with four facility tours. More than 500 companies will display their latest products, breakthrough technologies and new services. For more information contact David Rossiter at (303) 347-6209; or e-mail [rossiter@awwa.org](mailto:rossiter@awwa.org). Call Elaine Youngren at (303) 794-7711, extension 6161, for registration information.

### **June 30—July 2**

#### **American Water Resources Association Annual Summer Specialty Conference**

#### **“Science Into Policy—Water in the Public Realm” and “Wildland Hydrology”**

#### **Bozeman, Montana**

—AWRA’s 1999 Summer Specialty Conference has two exciting and thought-provoking tracks: “Science Into Policy—Water in the Public Realm” and “Wildland Hydrology.” Although the topics appear to be different and diverse, there is significant crossover in topic and theme. The conference will provide excellent opportunities for scientists and policy makers to exchange ideas and opinions about the future of water resources. For more information, contact AWRA headquarters office at (703) 904-1225; fax: (703) 904-1228; e-mail [awrahq@aol.com](mailto:awrahq@aol.com); or visit their Web site at [www.awra.org](http://www.awra.org).

### **July 12-14**

#### **California Association of Nurserymen Western Nursery & Garden Expo**

#### **Harvey’s Casino Hotel Lake Tahoe, Nevada**

—This annual convention kicks off with a golf tournament at Genoa Lakes Country Club on Monday, July 12. CAN has arranged special rates at Harvey’s for all convention attendees (\$133 per night for single or double occupancy). For more information contact Rebeca Kuhnt at 1-(800) 748-6214. To reserve a room, call Harvey’s at 1-(800) 427-8397.



## WATER CONSERVATION NEWS

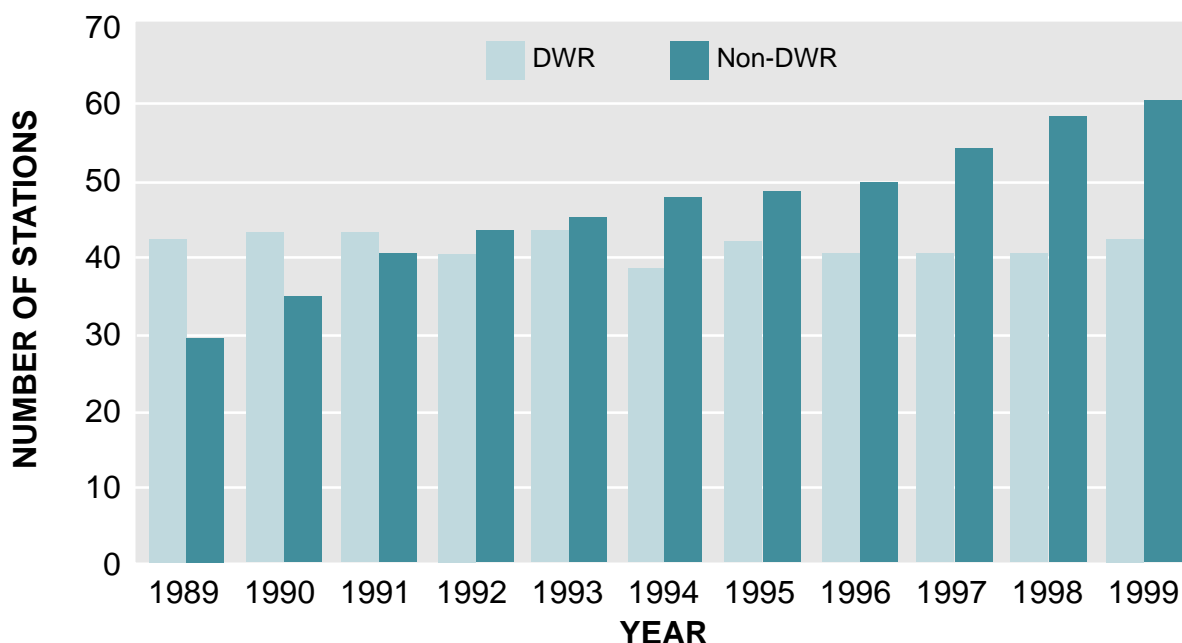
P.O. Box 942836  
 Sacramento, CA 94236-0001



*Address Correction Requested*

# CIMIS Network News

DWR-Owned and Non-DWR-Owned Weather Stations in the CIMIS Network  
 1989-1999



The chart above shows the number of both DWR-owned and weather stations owned by other agencies in the CIMIS network. As the chart indicates, the number of stations owned by DWR has not changed much; however, the number of stations owned by other agencies has almost doubled over the past 11 years. These non-DWR stations are maintained by water and irrigation districts; State, federal and county agencies; universities; cities; golf courses; farms; and private individuals.

For more information, visit the CIMIS web site at [wwwdpla.water.ca.gov/cgi-bin/cimis/main.pl](http://wwwdpla.water.ca.gov/cgi-bin/cimis/main.pl).